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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,755	02/24/2004	James Ibbetson	P0285US-7	2851

23935 7590 09/19/2007
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EXAMINER

PERRY, ANTHONY T

ART UNIT	PAPER NUMBER
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2879

MAIL DATE	DELIVERY MODE
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09/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/786,755

Applicant(s)

IBBETSON ET AL.

Examiner

Anthony T. Perry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/30/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment filed on 6/18/2007, has been entered and acknowledged by the Examiner.

New claims 44-48 have been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3, 8-10, 12-25, and 27-42 are rejected under 35 U.S.C. 102(a) as being anticipated by Sugimoto et al. (WO 03/010832).

EP 1,418,628 is from the same patent family as WO 03/010832 and is used for citing the appropriate teaches.

Regarding claims 1-3, Sugimoto teaches an emitter comprising: a light source (2) which emits a first spectrum of light and a conversion material region (3) formed separately from said light source and including conversion particles, said conversion material region positioned in proximity to said light source such that at least some of said light source light passes through said conversion material region, said conversion particles absorbing at least some of said light source light passing through said conversion material region and emitting a second spectrum of light (for example, see Fig. 17 and paragraphs 0006 and 0048). Sugimoto teaches light source (2) emits said first spectrum of light along a plurality of light paths extending through said conversion material region, each light path extending through a substantially equal amount of

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conversion particles and the conversion particles are distributed in said conversion material region such that the first spectrum of light and said second spectrum of light are combined within said conversion material region, said emitter emitting a combination of said first and second spectrums at a substantially uniform color and intensity (for example see Fig. 17 and paragraphs 0006 and 0048).

Regarding claims 8-9, Sugimoto teaches the conversion material region comprises a phosphor loaded cap shaped to fit closely over one or more of the surfaces of said light source (2) such that said light source light passing through said phosphor cap passes through substantially the same amount of said conversion particles (see for example Fig. 19).

Regarding claim 10, Sugimoto teaches the phosphor loaded cap including a perforation (3a) for receiving an electrical contact (B) to said light source (2) (see for example Fig. 19).

Regarding claim 12, Sugimoto teaches the phosphor loaded cap formed separately from said light source and bonded proximate at least on of the surfaces of said light source (see for example Fig. 19).

Regarding claim 13, Sugimoto teaches the emitter further comprising a submount (1), said light source (2) mounted to said submount and said conversion material region (3) mounted to said submount (1) (see for example Fig. 17).

Regarding claim 14, Sugimoto teaches the conversion material region (3) having a hemispheric shaped and said light source (2) is arranged to emit light toward the base of and through said conversion material region (3) (see for example Fig. 17).

Regarding claim 15, Sugimoto teaches the light source (2) comprising a light emitting diode (for example, see paragraph 0028).

Regarding claim 16, the emitter inherently emits a spectrum of light that is a combination of said first and second spectrums of light.

Regarding claim 17, the conversion material region (3) is positioned in relation to said light source (2) such that there is a space between the two (for example, see Fig. 19).

Regarding claim 18, Sugimoto teaches an emitter comprising: light source (2) which emits a first spectrum of light; and a conversion material region (3) formed separately from said light source (2) and positioned proximate to said light source (2), said conversion material region (3) arranged to absorb at least some of the light emitted by said light source and re-emit light at a second spectrum of light, said emitter emitting a combination of said first and second spectrums of light in a uniform third spectrum of light (for example, see Fig. 17 and paragraph 0031).

Regarding claim 19, the conversion material region (3) is inherently separable from said position proximate to said light source.

Regarding claim 20, the emitter further comprises a submount (1), wherein said light source is positioned on a first surface of said submount and said conversion material region (3) positioned on a second surface of said submount (for example, see Fig. 17).

Regarding claim 21, Sugimoto teaches a submount (1) configured to reflect some of said first and second spectrums of light (for example see Fig. 5).

Regarding claim 22, the conversion material region (3) comprises a lens, said lens being bonded to said second surface of said submount (1), said second surface being above said first surface (for example, see Fig. 17).

Regarding claims 23-24, Sugimoto teaches the a reflective surface (1c) formed on a surface of the cup-shaped submount (1) to reflect light emitted by the light source increasing the

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efficiency of the emitter (for example, see Fig. 20). The surfaces inherently reflect some of the first and second spectrums of light to the lens (4).

Regarding claim 25, Sugimoto teaches the lens including a clear material region (4) and a conversion material region (3) (for example, see Fig. 17).

Regarding claims 27-31, Sugimoto teaches the conversion material region (3) comprising a phosphor loaded cap shaped to fit the shape of said light source (2) and is formed separately from said light source, bonded proximate to said light source such that there is a space (3a) between the two and a substantially uniform emission of said third spectrum of light with at least one of a desired color and intensity is produced (for example, see Figs. 15 and 17).

Regarding claims 32-34, Sugimoto teaches a method of fabricating an emitter, comprising: providing a light source (2); providing a separately formed conversion material region (3) which includes conversion particles distributed throughout said conversion material region so that said emitter emits at least one of the same color and intensity of light; and bonding said conversion material region proximate to said light source on a surface of a submount (1), said conversion material region (3) being positioned so that at least some of the light emitted from said light source at different angles flows through said conversion material region and through the substantially the same amount of conversion particles (for example see Fig. 17 and paragraphs 0006 and 0048).

Regarding claims 35-38, Sugimoto teaches a step of providing said conversion material region with a lens having an opening configured to at least partially surround said light source (2) which includes said conversion material region (3), wherein the step of bonding said conversion material region proximate to said light source includes a step of bonding said lens to one of said first surface and a second surface of a flat submount (1).

Regarding claim 39, Sugimoto teaches the submount (1) includes a cup-shaped submount with a third side configured such that it reflects at least a portion of the light reemitted from said conversion material region (for example, Fig. 20).

Regarding claims 40-42, wherein the step of providing said conversion material region (3) includes a step of providing a phosphor loaded cap that includes said conversion material region (3) and is shaped to at least partially surround said light source (2) and is provided with a perforation (3a) for engaging a contact (B) (for example, see Fig. 15).

Regarding claims 44-45, Sugimoto discloses an emitter, comprising: a light source (12) emitting a first spectrum of light; and a substantially hemispherical lens element (3) having a uniform distribution of wavelength conversion material (phosphor conversion particles) dispersed throughout, said lens element (3) disposed proximate to said light source (2) such that most of the light emitted from said source over the entire range of angles interacts with substantially equal amounts of said wavelength conversion material before it is emitted into the ambient; wherein said emitter emits a second spectrum of light having substantially uniform color and intensity distributions over the entire range of viewing angles (for example see Fig. 17 and paragraphs 0006 and 0048).

Regarding claim 46, teaches an embodiment wherein the first spectrum comprises blue light and said second spectrum comprises blue and yellow light such that said second spectrum appears white to the human eye.

Regarding claim 47, Sugimoto teaches the phosphor loaded cap including a perforation (3a) for receiving an electrical contact (B) to said light source (2) (see for example Fig. 19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey et al. (US 6,204,523).

Regarding claims 1, 6, and 7, Carey teaches an emitter comprising a light source (26) which emits a first spectrum of light and a conversion material region comprising a glass lens (20) that includes conversion particles and is formed separately from said light source and bonded proximate to the light source (26) such that at least some of the light source light passes through said conversion material region, said conversion particles absorbing the light and emitting a second spectrum of light (for example, see Fig. 2, col. 4, lines 31-37, and col. 5, lines 23-30). Carey does not specifically state that the first spectrum of light and the second spectrum of light are combined to emit a substantially uniform color and intensity. However, it is the position of the examiner that such a functional limitation is implicit. It would have been obvious to one of ordinary skill in the art to ensure that the combination of the two spectrums are emitted at a substantially uniform color and intensity in order to use the device in particular applications that require certain colors and intensities be used.

Claims 11, 22, 26, 43, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. (WO 03/010832).

Regarding claims 11, 43, and 48, the embodiment shown in figures 15 and 19 shows conversion particles located in the conversion material region (3) located in the perforation (3a)

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of the phosphor load cap, but does not show light scattering particles at least partially filled in the perforation (3a). However, in a separate embodiment Sugimoto teaches a layer including scattering particles located around the conversion material region so that light released from the conversion particles is scattered and the distribution of intensity is averaged (see paragraph 0056). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a light scattering layer including light scattering particles in the perforation (3a) around the conversion material region (3) of the embodiment shown in figures 15 and 19 in order to prevent color irregularities and provide a uniform color and intensity of light emitted from the emitter.

Regarding claims 22 and 26, the embodiment shown in figure 17 does not show lens-shaped conversion material region (3) located within the submount (1). However, in a separate embodiment Sugimoto teaches the submount includes a step portion that has the conversion material region (3) fitted and detachably attached to the step portion so that the conversion material region can be replaced (for example, see Fig. 5 and paragraph 0036). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the lens-shaped conversion material of figure 17 within in the submount on a step portion so that the conversion material can easily be replaced and the service life of the emitter can be extended.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. (WO 03/010832) as applied to claim 1 above, and further in view of Duggal et al. (US 6,891,330).

Regarding claim 5, Sugimoto teaches a separate layer (8) including scattering particles which redirect at least some of the first and second spectrum of light (for example, see Fig. 29).

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Sugimoto does not specifically teach the scattering particles included in the conversion material region (3). However, Duggal teaches scattering particles and conversion particles included in the same layer (see col. 10, lines 26-28). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the scattering particles of layer (8) of the Sugimoto reference in the conversion material region (3) so that only one layer is needed and the number of steps involved in the manufacturing of the emitter as well as the manufacturing time can be reduced.

Response to Arguments

The declaration filed on 6/18/07 under 37 CFR 1.131 has been considered but is ineffective to overcome the Sugimoto reference.

The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Sugimoto reference to either a constructive reduction to practice or an actual reduction to practice.

Regarding the Applicant's arguments that Sugimoto does not read on new claims 44-48, the examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a single lens element) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is noted that the element (3) that contains the conversion particles has a substantially hemispherical shape and is considered to be a lens element due to its shape (see Figs. 16-17). It is true that the emitter shown includes a second element (4) covering the lens element (3), however, the reference still reads on claims 44-48.


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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (571) 272-2459. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2459. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JOSEPH WILLIAMS
PRIMARY EXAMINER

/Anthony Perry/

Anthony Perry
Patent Examiner
Art Unit 2879
September 4, 2007